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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,141	07/03/2001	Masanori Yabu	0229-0649P	1199

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EXAMINER
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DUONG, THANH P

ART UNIT	PAPER NUMBER
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3711

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/897,141	YABU, MASANORI
	Examiner Tom P Duong	Art Unit 3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 December 2002.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 4-6, 8-11, and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tsuchiya '217.

Regarding claims 1-2, Tsuchiya '217 discloses a golf club head (Figs. 1-7) comprising a face (21), a crown (22), a sole (23), a sidewall extending from the periphery of the sole towards the crown (Fig. 7) excluding the face, and a neck to be fixed to a shaft.

Tsuchiya discloses it is conventional to form the club head parts by casting method including the sole and wall member (Col. 2, lines 24-38). However, the conventional casting technique suppresses enlargement of sweet spot (Col. 1, lines 54-54), difficult to control center of gravity (Col. 1, lines 64-65), poor flexion or coefficient of restitution (Col. 2, lines 13-15), and small moment of inertia values (Col. 2, lines 59-69) . The above drawback is overcome in Tsuchiya's invention by fabricating the face and crown area thinner (Col. 2, lines 15-24) using plastic working (Col. 4, lines 61-68) or plastic deformation process in order to accomplish large sweet spot, improved coefficient of restitution, and moment of inertia (Col. 3 lines 64-64). If for purpose of argument "plastic working" is not the same as plastic deformation processing, then it would be obvious to use plastic deformation processing to make the face thinner. Regarding

claims 2 and 9, the crown section piece 22 and sole section piece 23 have a neck extension, and these pieces are welded together (Col. 5, lines 6-7). Regarding claims 4-6, Tsuchiya discloses the head volume is 190 cc or larger. (Col. 3, lines 50-52) and a density value of 4.5 g/cm<sup>3</sup> (Table 1). Regarding claim 8, it is inherent that the plastic working process utilizes rolled sheet metal as the starting material. Regarding claim 13, Tsuchiya discloses the moment of inertia of 3000 or larger (Col. 3, lines 64-69).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya '217 in view of Official Notice. Regarding claim 3, Official Notice is taken that it is known in the art to weld club parts together and it would have been obvious to do so here to facilitate assembly. Regarding claims 10 and 11, Tsuchiya does not disclose the sweet spot height and depth of the center of gravity. However, Tsuchiya discloses the conventional casting process suppresses the sweet spot area and difficult to control the center of gravity, but the plastic working process overcome the above drawback. Thus, it is inherent that the club head of Tsuchiya has the sweet spot height and depth of the center of gravity as the claimed thru routine optimization. Furthermore, Official Notice is taken that it is known in the golf club's art that manufacturers produce club heads with

different sweet spot height and location of center of gravity in order to maximize sweet spot area and moment of inertia.

3. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya '217 in view of Peterson (6,162,133) and Hoshi et al. (5,205,560). Tsuchiya discloses it is conventional to fabricate club head which includes the sole and sidewall with casting material (Col. 2, lines 24-30), but does not disclose expressly the lost wax casting technique. Peterson teaches that the club head 10, including the sole plate and side wall, is fabricated as a one-piece body 32 by casting such as lost wax casting (Col. 4, lines 23-63) in order to eliminate the disadvantage of welding and mechanical fastening (Col. 2, lines 37-41). Hoshi '560 also teaches that it is conventional to fabricate the club head with lost-wax casting process. Thus, it is inherent and obvious in view of Peterson and Hoshi to one having ordinary skill in the art that conventional casting as mentioned by Tsuchiya inherently includes wax-casting process. Claim 12 recites limitation similar to claims 1-11; thus, claims 12 is rejected for the same reasons as applied in claim 1-11, above.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (703) 305-4559. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Sewell can be reached on (703) 308-2126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7768 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4148.



Paul T. Sewell  
Supervisory Patent Examiner  
Group 3700

Tom Duong  
March 13, 2003